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ThermoFlo Accessories

Installation & Operation Instructions



*Systems for Development, Production
and Repair of Electronic Assemblies*

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This manual will provide you with the information necessary to properly install, operate and maintain all of the available accessories (except Thermocouple Meter & Large Board Holder) for the PACE ThermoFlo systems.

Detailed installation instructions are provided for each available accessory. Currently available accessories are:

Work Platform

Advanced Placement Platform

Heat Wave Preheating System

Large Board Holder

Lens Vision Attachment

Camera Vision Attachment

Fume Extraction "Ready" Attachment

Thermocouple Meter (instructions supplied separately)

All ThermoFlo accessories are very easy to operate. Easy to understand guidelines are given for the operation of each accessory (except Heat Wave & Large Board Holder). The Heat Wave and Large Board Holder are shipped with separate manuals specific to that system/accessory only.

Work Platform

Installation

The Work Platform is provided with each TF 500 ThermoFlo System.

Use the following instructions and accompanying illustrations as a guide to assemble the Work Platform.

1. Place the Base upside down on a work surface and install the 4 Rubber Feet (with built-in screws) at the corners of the Base.
2. Turn the Base over and position as shown.
3. There are 2 Alignment Pins located on the bottom of the Support Arm. Insert the 2 Alignment Pins fully into the 2 Alignment Holes in the Base.
4. Install the 4 Mounting Bolts and Lock Washers. Tighten each bolt to secure the Support Arm to the Base.
5. Insert one end of the supplied Ground Cable into the Base as shown or into either of the 2 Groun Jacks at the front, right side of the Base.

Operation

Ground Cable

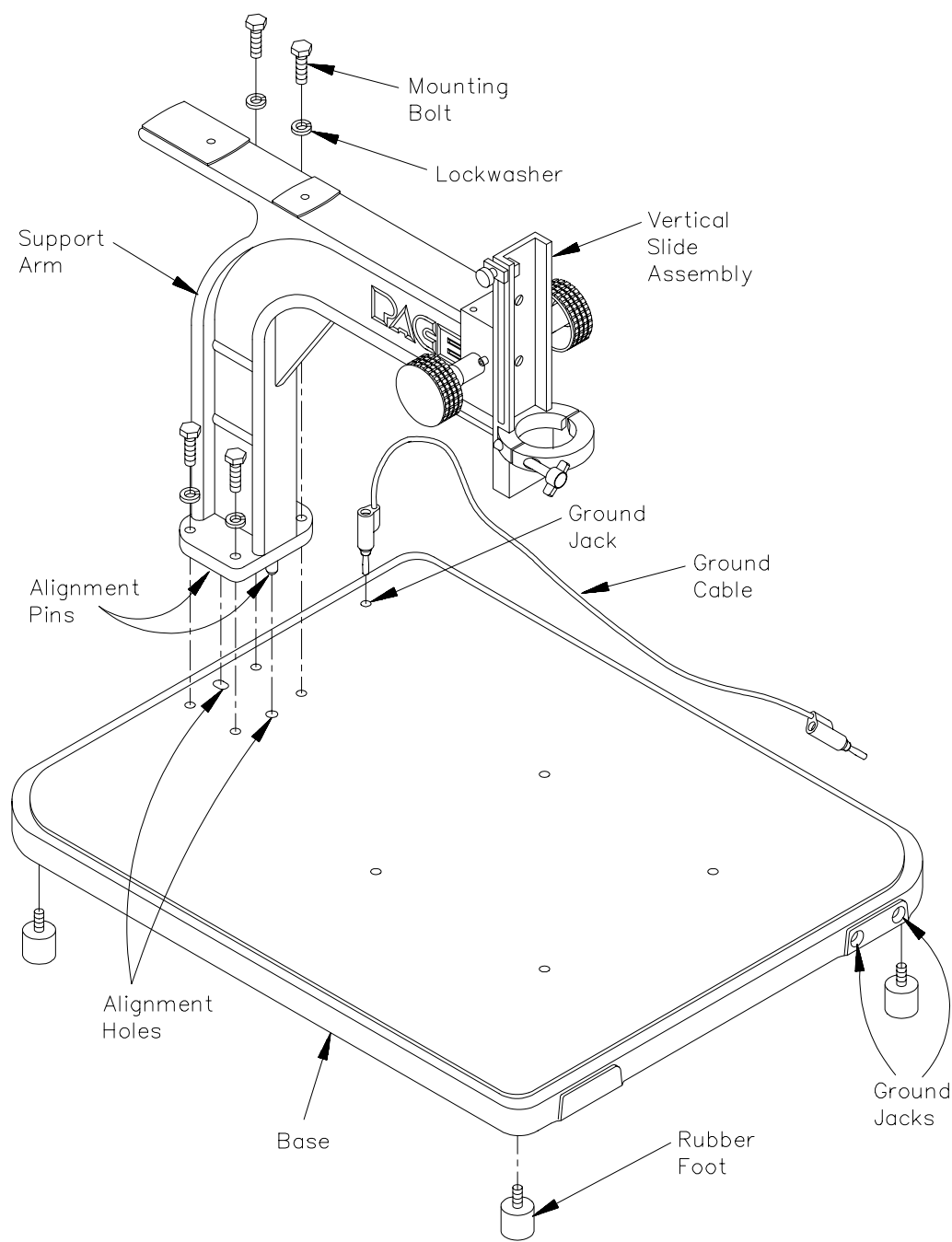
The Ground Cable is supplied to provide a connection to the Work Platform as a part of your static control program.

Slide Assembly

The Vertical Slide Assembly holds the ThermoFlo handpiece in a vertical position for precise component removal and installation operations. The handpiece is installed vertical to the work platform base; the bottom edge of any installed nozzle (except Curved, Single Jet) is horizontal to any PCB (installed on a board holder) on the Work Platform. Refer to the Handpiece Installation procedure to properly install the handpiece.

Simply rotate either of the Vertical Control Knobs to raise or lower an installed ThermoFlo handpiece (with attached nozzle). Refer to "ThermoFlo Handpiece" "Operation" for additional information

Work Platform



Advanced Placement Platform

Installation

The Advanced Placement Platform (including Fine Adjustment Table) is provided with each TF 700 ThermoFlo System. Use the following instructions and accompanying illustrations as a guide to assemble the Advanced Placement Platform.

1. Place the Base upside down on a work surface and install the 4 Rubber Feet (with built-in screws) at the corners of the Base.
2. Turn the Base over and position as shown.
3. There are 2 Alignment Pins located on the bottom of the Spacer. Insert the 2 Alignment Pins fully into the 2 Alignment Holes in the Base.
4. There are 2 Alignment Pins located on the bottom of the Support Arm. Insert the 2 Alignment Pins fully into the 2 Alignment Holes in the Spacer.
5. Install the 4 long Mounting Bolts and Lock Washers. Tighten each bolt to secure the Support Arm and Spacer to the Base.
6. Place the Fine Adjustment Table in position on the Base. Align the 4 threaded Mounting Holes in the center of the Base with the 4 Mounting Holes of the Fine Adjustment Table.
7. Secure Fine Adjustment Table to the Base using the 4 short Mounting Bolts, Lockwashers & Flat Washers.
8. The 4 mounting screws that secure the ends of the 2 metal slide rods in position together may loosen during shipment. Loosen all 4 mounting screws and perform the following procedure.
 - a) Move the Clamp Assemblies to the ends of the metal slide rods.
 - b) Move the metal slide rods to their Right side limit and tighten the 2 mounting screws on the Left side ends of the metal slide rods. NOTE: You may need to loosen the X-Axis Lock.
 - c) Move the metal slide rods to their Left side limit and tighten the 2 mounting screws on the Right side ends of the metal slide rods.
9. Insert one end of the supplied Ground Cable into the Base as shown or into either of the 2 Ground Jacks at the front, right side of the Base.
10. Install the Y-Axis Stops into the Clamp Assemblies as shown. One of the Y-Axis Stops has a longer curved "L" section than the other. This larger stop should be installed onto the left side of the Fine Adjustment Table (facing as shown in illustration).

Operation

Vertical Slide Assembly

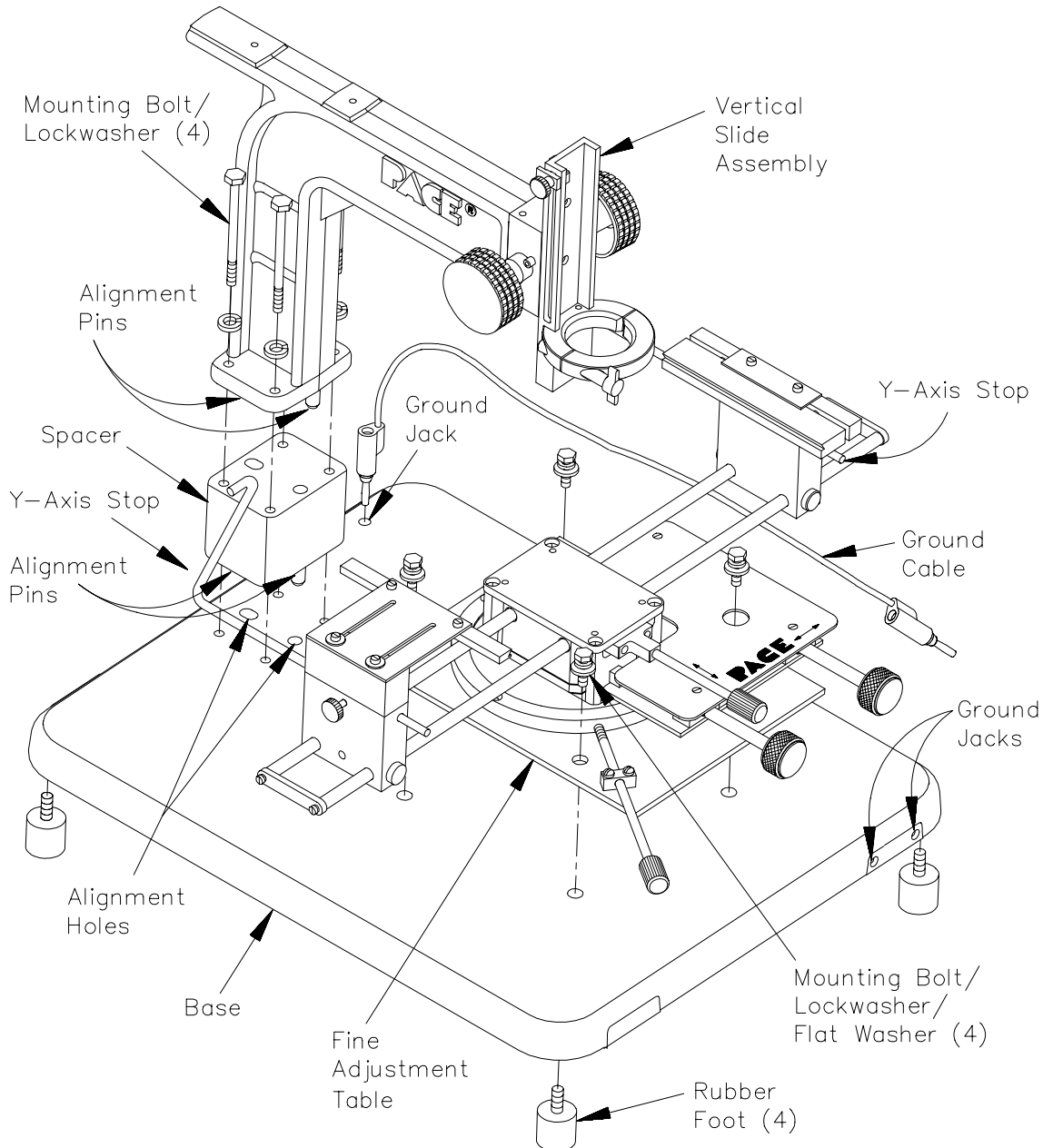
The Vertical Slide Assembly holds the ThermoFlo handpiece in a vertical position for precise component removal and installation operations. Refer to the Handpiece Installation procedure to properly install the handpiece.

Simply rotate either of the Vertical Control Knobs to raise or lower an installed ThermoFlo handpiece (with attached nozzle). Refer to "ThermoFlo Handpiece" "Operation" for additional information.

Advanced Placement Platform

Ground Cable

The Ground Cable is supplied to provide a connection to the Work Platform as a part of your static control program.



Fine Adjustment Work Platform

Fine Adjustment Table

The Fine Adjustment Table facilitates the installation of fine pitch SMT components. The table can hold your PCB (up to 45.7cm X 45.7cm (18" X 18")) assemblies in position for rework. Fine adjustment x & y axis controls allow easy component to land pattern alignment. Following is a description of the features. Refer to the illustration.

Parts Identification

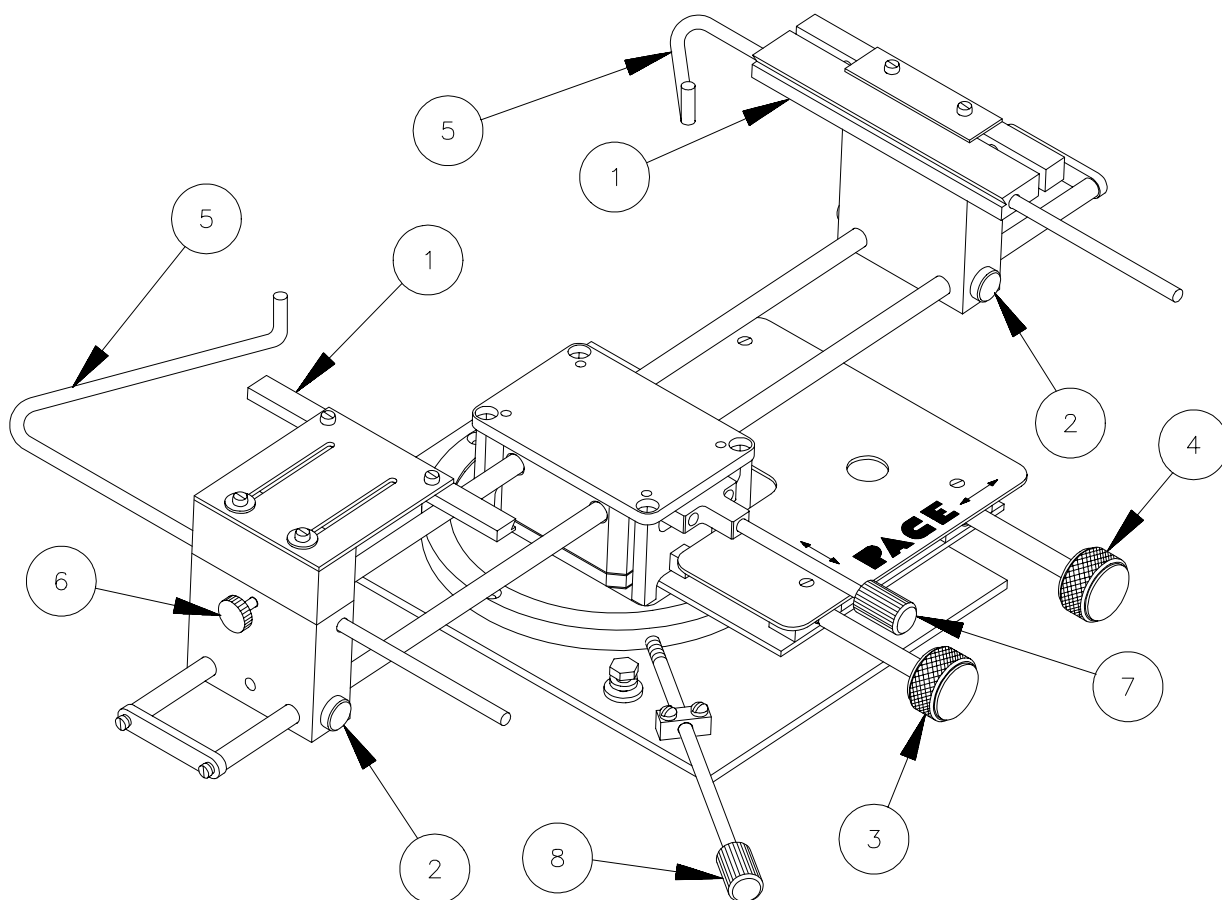
- ① PCB Clamp Assembly (2) - Holds PCB assembly on Fine Adjustment Table.
- ② Clamp Assembly Locks (2 on each Clamp Assembly) - Locks PCB in place preventing X-axis (side to side) movement along the 2 metal slide rods. Two locks on each PCB Clamp Assembly must be fully depressed to allow clamp movement along the slide rods.
- ③ Y-Axis Fine Adjust Control - Allows fine adjustment of Y-Axis (front to back) table position.
- ④ X-Axis Fine Adjust Control - Allows fine adjustment of X-Axis (side to side) table position.
- ⑤ Y-Axis Stop (2) - Memory retention feature allows Y (front to back) directional stop reference for repeatable PCB positioning.
- ⑥ Y-Axis Locks - Locks Y-Axis Stops in place.
- ⑦ X-Axis Lock - Locks the metal slide rods in position to prevent X-Axis (side to side) movement.
- ⑧ Theta Lock - Locks table in position to prevent Theta Rotation.

Operation

1. Install the PCB to be repaired/reworked in the following manner.
 - a) Press the 2 Clamp Assembly locks on each PCB Clamp Assembly. Adjust the spacing of the 2 PCB Clamp Assemblies to the size of the PCB.
 - b) Orient the PCB as desired and insert side edges into the "V" grooved slot at the top of each PCB Clamp Assembly. Slide PCB into clamp assemblies.
 - c) Adjust the PCB Clamp Assembly on the Right side of the table toward the PCB to apply a slight spring pressure. Depress item ② Clamp Assembly Lock to release Clamp Assembly
2. Adjust the coarse center position of the PCB rework area relative to the ThermoFlo handpiece and Nozzle in the following manner:
 - a) Lower the Nozzle to a position just above the PCB.
 - b) Position PCB in PCB Clamp Assemblies (item ①) with rework area centered (front to back).
 - c) Turn the X-Axis Lock knob (item ⑦) counterclockwise to free side to side movement of the metal slide rods (and PCB). Move metal slide rods to position component rework area beneath ThermoFlo handpiece and Nozzle. Turn the X-Axis Lock knob clockwise to lock in position.
 - d) Repeat 2a and 2b as necessary to center component rework area under Nozzle.

Fine Adjustment Work Platform

- e) Turn the Theta Lock knob (item ⑧) counterclockwise to loosen. Grasp the ends of the metal slide rods; push one end while pulling the other to rotate table. Rotate table until component/land pattern is square to nozzle. Turn Theta Lock knob clockwise to lock table in position.
 - d) Adjust the Y-Axis Stops if desired. Loosen (turn knobs counterclockwise) the 2 Y-Axis Locks (item ⑥) and position the raised portion of the stops to contact the back edge of the PCB. Lock in position with the Y-Axis Locks.
3. Fine adjust the position of the component to be removed to the nozzle or the component being placed to the PCB land pattern in the following manner.
- a) Turn the X-Axis Lock knob (item ⑥) fully clockwise to lock metal slide rods in position.
 - b) Adjust table side to side position using the X-Axis Fine Adjust Control (item ④).
 - c) Adjust table front to back position using the Y-Axis Fine Adjust Control (item ③).
 - d) Adjust Theta Rotation as necessary (see step 2e).



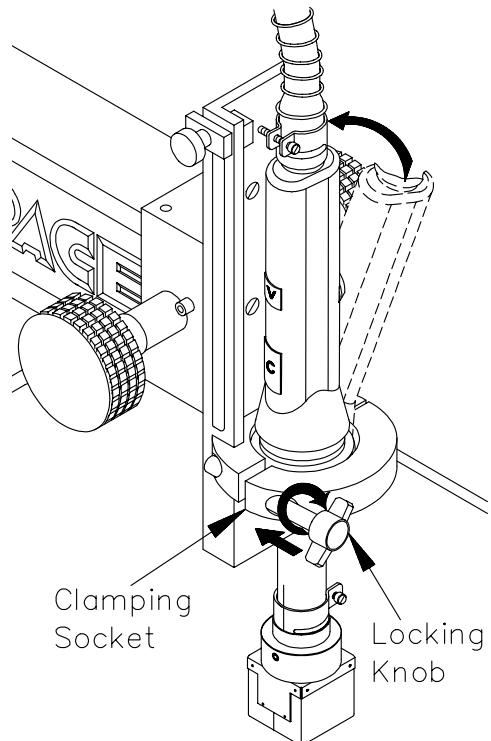
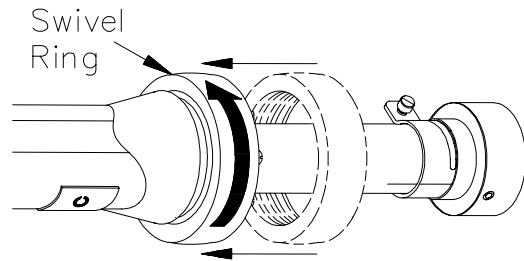
ThermoFlo Handpiece

Installation

NOTE

If the Fiber Optic Lighting Attachment or any of the Vision Attachments (Lens or Camera) have been purchased, they should be installed before performing the following procedure.

1. Unscrew the Plastic Heat Shield (marked "HOT") from the ThermoFlo handpiece and set aside.
2. Install the metal Swivel Ring (part number 1321-0320) onto the ThermoFlo handpiece.
3. Turn the Locking Knob counterclockwise several turns to release the Clamping Socket.
4. Pull the Locking Knob forward. The Clamping Socket will swing open at the knob.
5. Place the ThermoFlo handpiece, positioned at an angle with the heater down, through the center of the Clamping Socket.
6. The Clamping Socket and the Swivel Ring (on handpiece) form a ball and socket attachment mechanism. Slide the Swivel Ring into the Clamping Socket.
7. Straighten the ThermoFlo handpiece up into a vertical position. Ensure that the Swivel Ring remains inside the Clamping Socket.
8. Push the Locking Knob and turn clockwise to secure the ThermoFlo handpiece in position.



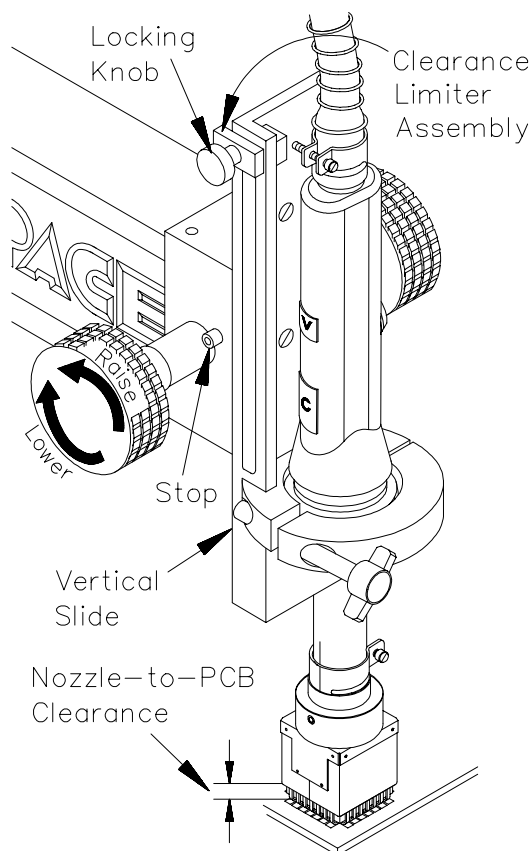
ThermoFlo Handpiece

Operation

The ThermoFlo handpiece can be easily raised or lowered using either of the Height Adjustment Knobs.

To provide repeatable clearance of an attached nozzle assembly relative the the surface of PCB assembly (Nozzle-to-PCB clearance), do the following:

1. Loosen the Locking Knob. The Clearance Limiter Assembly will now fall down against the Stop.
2. Lower the handpiece to the desired distance of Nozzle-to-PCB clearance using the Height Adjustment Knobs.
3. Ensure contact between the Clearance Limiter Assembly and the Stop. Tighten the Clearance Limiter Locking Knob to secure the Clearance Limiter Assembly in position on the Vertical Slide.



Standard Board Holder

Installation

This accessory (part number 6018-0098) is provided with each TF 500 ThermoFlo System. You can use this accessory to hold your PCB (up to 20.3 cm X 20.3 cm (8" X 8") size) assemblies in position for rework. If you are using a Heat Wave Preheating System, it is not necessary to assemble this accessory; use the board holder on the Heat Wave.

Use the following instructions and accompanying illustrations as a guide to assemble the standard Board Holder.

1. Place the Base (item ⑨) upside down on a work surface and install the 4 Rubber Feet (item ⑩) using the 4 Mounting Screws (item ⑪).
2. Turn the Base over and position as shown.
3. Mount the Large Bracket (item ①) to the left side of the Base (item ⑤) using 2 Mounting Screws (item ②).

NOTE
There are mounting holes at 2 different heights on each of the supplied brackets. Use the holes which provide the correct height for use with your PCB assemblies.

4. Place the Long Holding Clamp (item ④) in position on the Large Bracket (item ①). Secure clamp in position using a Locking Screw (item ③) and Flat Washer (item ⑧).
5. Install the Leveling Screw (item ⑦) Adjust Leveling Screw until its end just touches the bottom of the Long Holding Clamp (item ④).
6. Mount the Small Bracket (item ⑤) to the right side of the Base (item ⑨) using 2 Mounting Screws (item ②).
7. Place the Short Holding Clamp (item ⑥) in position on the Small Bracket (item ⑤). Secure the clamp in position using the Locking Screw (item ③) with Flat Washer (item ⑧).

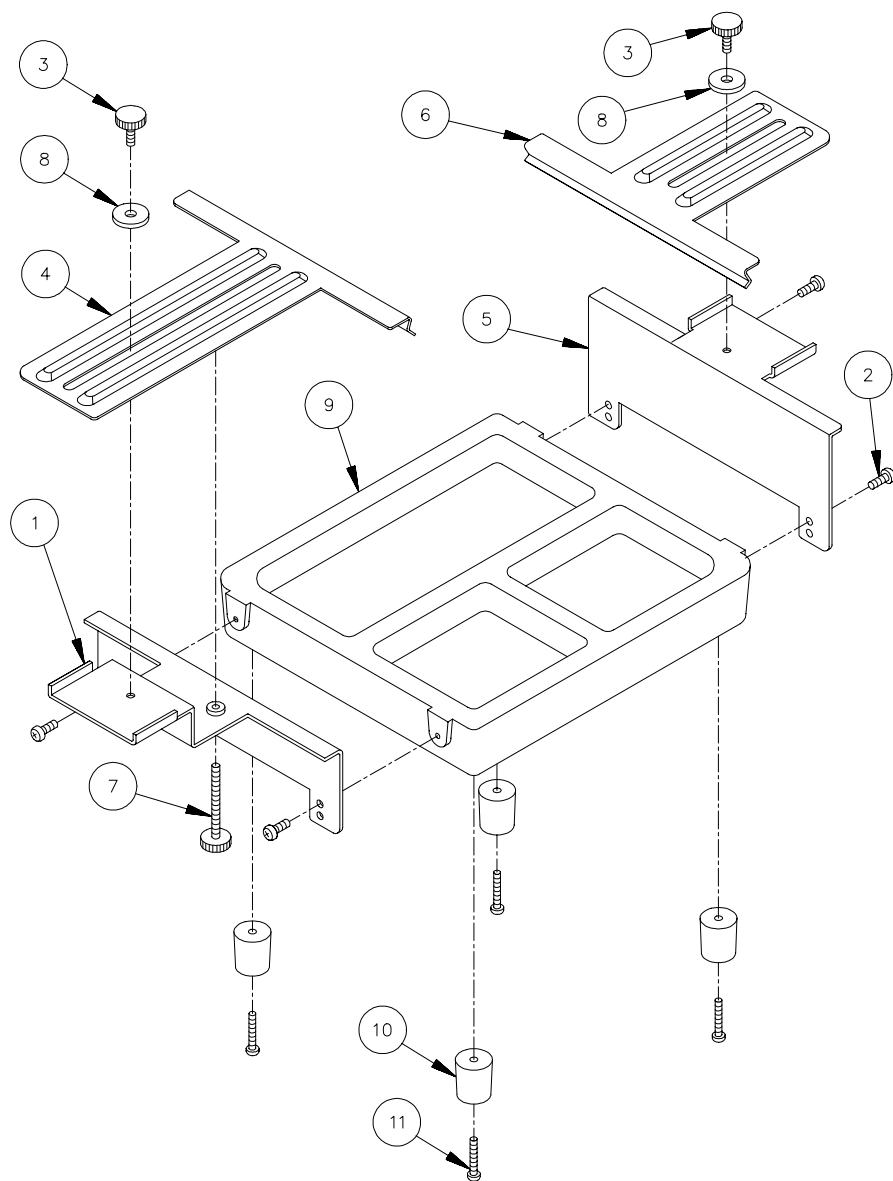
Operation

To install a PCB assembly, simply adjust the holding clamps as necessary, place the PCB in the “V” grooves on the clamps and tighten the Locking Screws to secure in position.

Position the Board Holder with the component rework area directly beneath the ThermoFlo handpiece.

Move the PCB or Board Holder as necessary for proper component-to-nozzle alignment.

Standard Board Holder

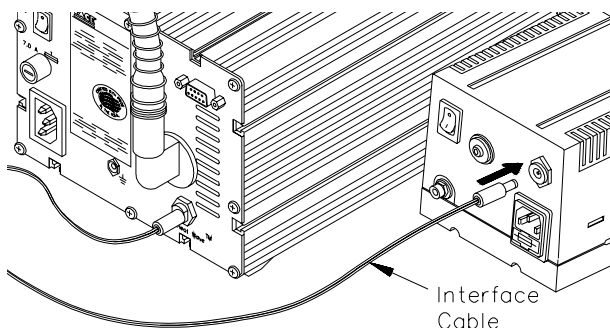


Heat Wave Interface

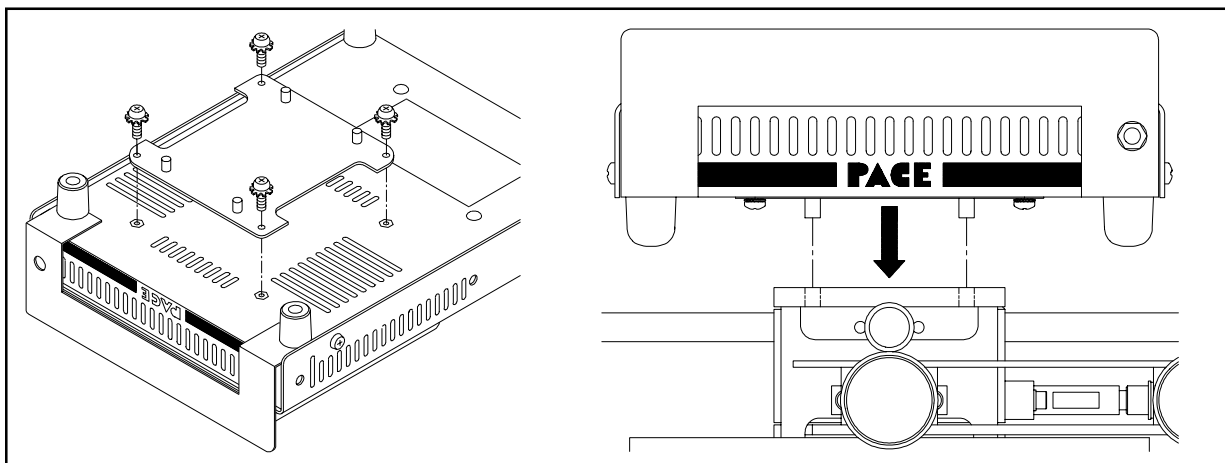
Installation

An interface cable must be installed when using the HS 200 Heat Wave system with the ThermoFlo. If an Advanced Placement Platform has been purchased, an adapter plate must be installed on the bottom of the Heat Wave heater unit to allow mounting onto the Fine Adjustment Table.

1. The Heat Wave Interface Cable (part number 1332-0187) connects the ThermoFlo Unit to the Heat Wave power source to provide on/off control of the pump assembly in the Heat Wave. Connect the cable between the Heat Wave connector on the rear panel of the ThermoFlo Unit and the like connector on the rear panel of the Heat Wave power source.



2. If you have purchased a Fine Adjustment Work Platform, install the enclosed Adapter Plate onto the bottom of the Heat Wave Heater Unit using the 4 mounting screws supplied with the plate. Place the Heat Wave Heater Unit on Fine Adjustment Table, inserting the 4 pins on the Adapter Plate into the 4 pin holes on the table. Refer to illustrations.



Operation

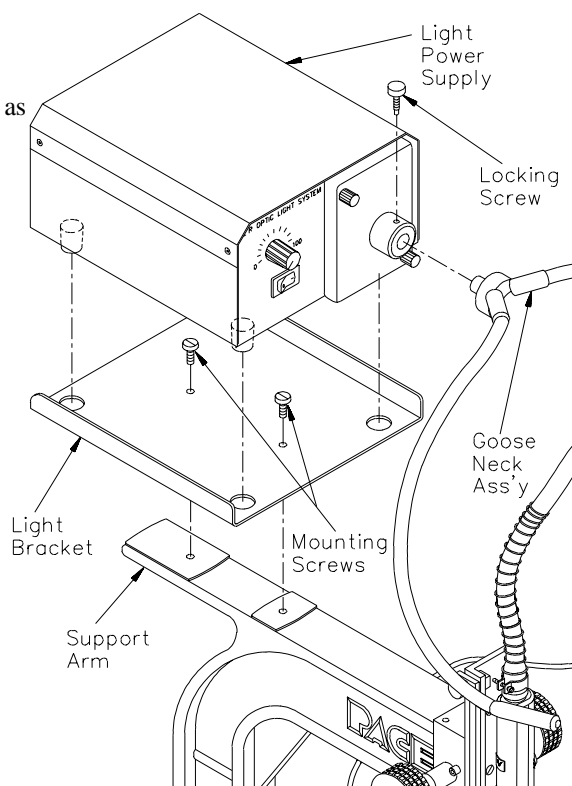
The Heat Wave Preheating System can be used at any time in conjunction with the ThermoFlo but the Heat Wave motor pump is controlled by the ThermoFlo unit in the Program Mode only. The stored parameters of the Profile in use will control activation of the motor pump. The temperature of the Heat Wave is not set or controlled by the ThermoFlo. The temperature must always be set on the Heat Wave power source.

Fiber Optic Lighting Attachment

Installation

Use the following instructions and accompanying illustrations as a guide to assemble the Fiber Optic Lighting Attachment.

1. Orient the Light Bracket as shown on the Support Arm.
2. Install the 2 enclosed Mounting Screws to secure the Light Bracket in position on the Support Arm.
3. Place the Light Power Supply in position on the Light Bracket. The 4 rubber feet on the bottom of the power supply fit in the punched holes at the corners of the bracket.
4. Install the Goose Neck Assembly onto the Light Power Supply as shown. Secure in position with the Locking Screw.
5. Plug the female end of the enclosed power cord into the power receptacle on the rear panel of the Light Power Source.
6. Plug the male end of the power cord into the house AC supply.

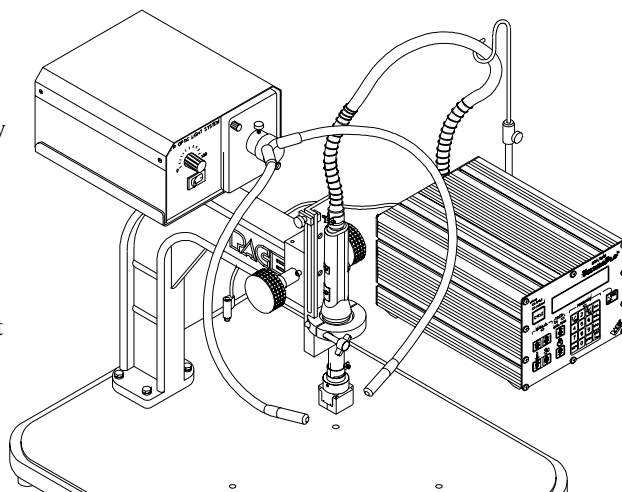


Operation

1. Turn the power switch (on Light Power Supply front panel) to the On position.
2. Position both necks of the Goose Neck Assembly for best application of light to the workpiece.
3. Adjust the light intensity control knob (on Light Power Supply front panel) for best light brightness.

Replacement Lamp (Light Power Supply) - PACE Part Number 1165-0027

For complete information on operation, servicing and replacement parts of the VL405 Light Power Supply, refer to the enclosed Operation Manual.



Fume Extraction Ready Attachment

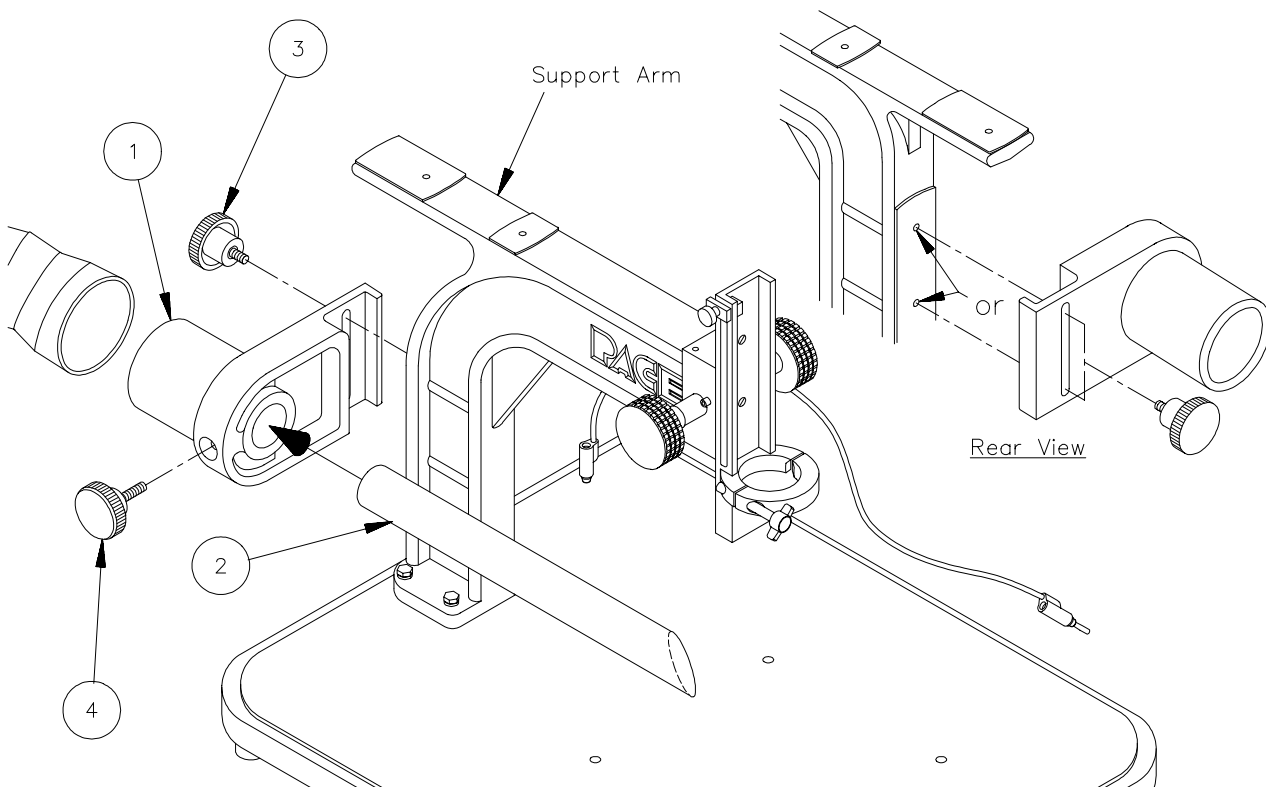
Installation

This Kit (part number 6018-0105) allows the user to easily connect a 7.6mm (3 inch) fume extraction hose to the Work Platform. Use the following instructions and accompanying illustrations as a guide to assemble the Fume Extraction Ready Attachment.

1. Install the Hose Connector (item ①) onto the Support Arm as shown. Install the Height Locking Knob (item ③, the shortest of the 2 knobs supplied) through the slot in the Hose Connector and into either of the 2 mounting holes in the Support Arm (see Rear View on illustration). Tighten the Height Locking Knob (item ③) to secure the Hose Connector in position.

NOTE

The 2 mounting holes offer the user a wide range of height adjustment. For lower height adjustments, use the lower mounting hole; for greater height requirements, use the upper mounting hole.

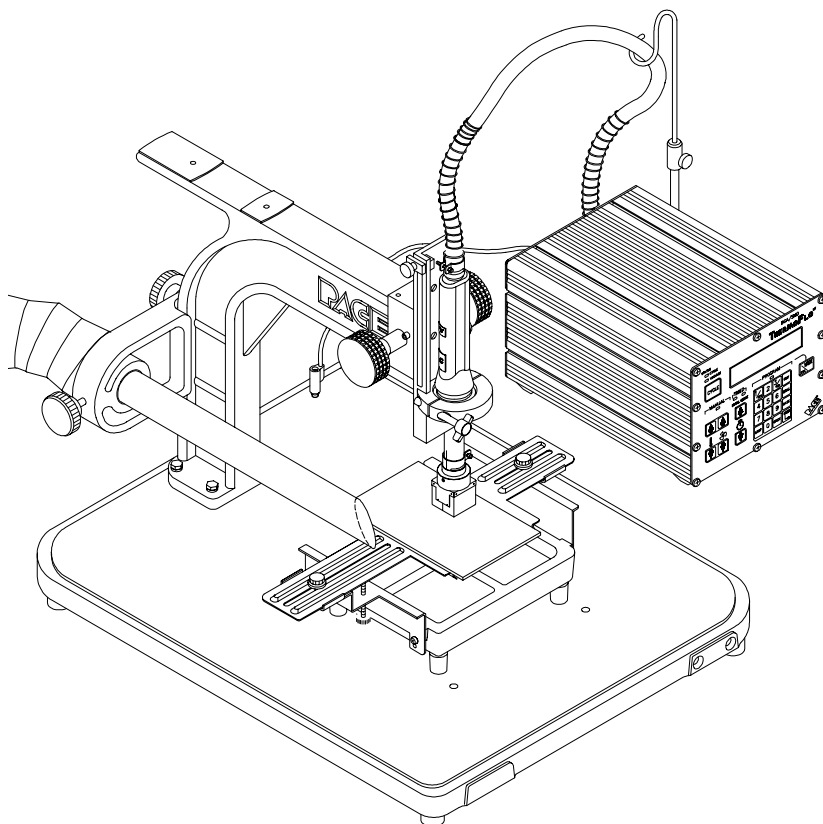


Fume Extraction Ready Attachment

2. Install the Tube Locking Knob (item ④) loosely into its mounting hole.
3. Slide the straight end of the Tube (item ②) into its mounting hole on the Hose Connector.
4. Adjust the Tube (item ②) in position where the straight end is flush with the rear of the Hose Connector (item ①) and the angled end is vertical to the Work Platform.
5. Tighten the Tube Locking Knob (item ④) to secure the Tube (item ②) in position.
6. Connect a 7.6mm (3 inch) diameter, flexible air hose (not supplied) between the Hose Connector (item ①) and your fume extraction system.

Operation

1. Place a PCB assembly (mounted on board holder, fine adjustment table or Heat Wave) in position on the work platform.
2. Adjust the position of the Tube with its angled end aligned next to and facing the PCB.
3. Position the height of the Tube slightly above the PCB by adjusting the height of the Hose Connector.
4. Reposition the Tube as necessary during rework operations to provide optimal fume extraction.



Vision Systems

Introduction

The following procedures detail the steps required to install and operate any of the ThermoFlo vision accessories. The Precision Swivel is supplied with each vision system purchased. Install the Precision Swivel and then install your Lens Vision or Camera Vision Attachment using the applicable procedure.

Precision Swivel

Installation

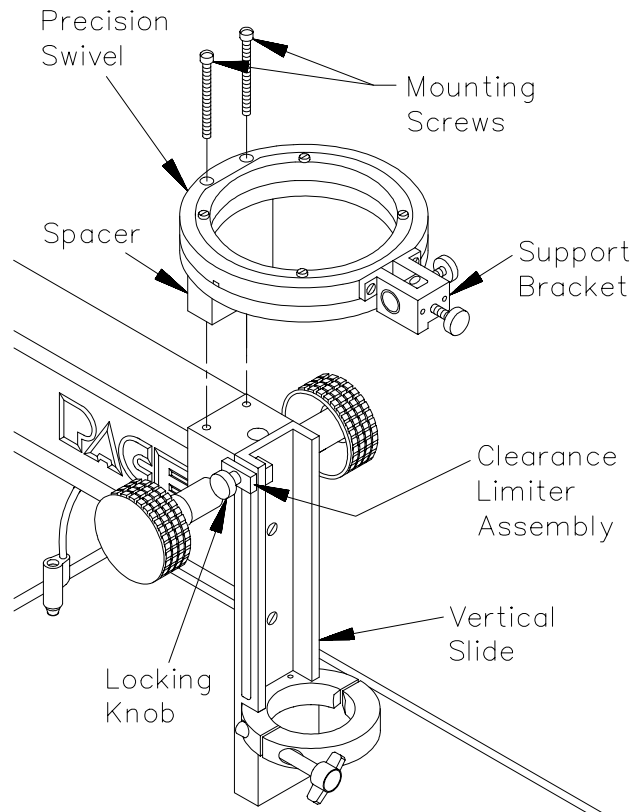
Installation of this accessory is required before installing a Lens Vision or Camera Vision Attachment. . Use the following instructions and accompanying illustrations as a guide to install the Precision Swivel.

1. The Precision Swivel is supplied with its 2 Mounting Screws secured with 2 hex nuts to hold the Spacer in place during shipment. Remove the 2 hex nuts and hold the Spacer, Precision Swivel and Mounting Screws together.
2. Ensure that the Support Bracket is positioned as shown, opposite (180° from) the Mounting Screws. If not, turn the Precision Swivel to place the Support Bracket in the proper position.
3. Place the Precision Swivel (with Spacer) in position on the Vertical Slide as shown with the 2 Mounting Screws aligned with the 2 mounting holes on the Vertical Slide.
4. Insert the 2 Mounting Screws into the 2 mounting holes on the Vertical Slide. Tighten the screws to secure the Precision Swivel on the Vertical Slide.
5. Move the Vertical Slide up and down through its full range of travel to ensure free movement. If the Clearance Limiter Assembly Locking Knob hits the Precision Swivel, loosen the 2 Mounting Screws and align the Precision Swivel to clear the Locking Knob. Tighten Mounting Screws to secure in position.

Operation

The Precision Swivel allows the Support Bracket (with attached Vision accessory) to be rotated 180° around the work. Spring detents at 0°, 90° and 180° provide quick reference stops.

To position the attached Vision accessory, simply grasp the Support Bracket or accessory and move left or right (in an arc) as desired.



Vision Systems

Lens Vision Attachment

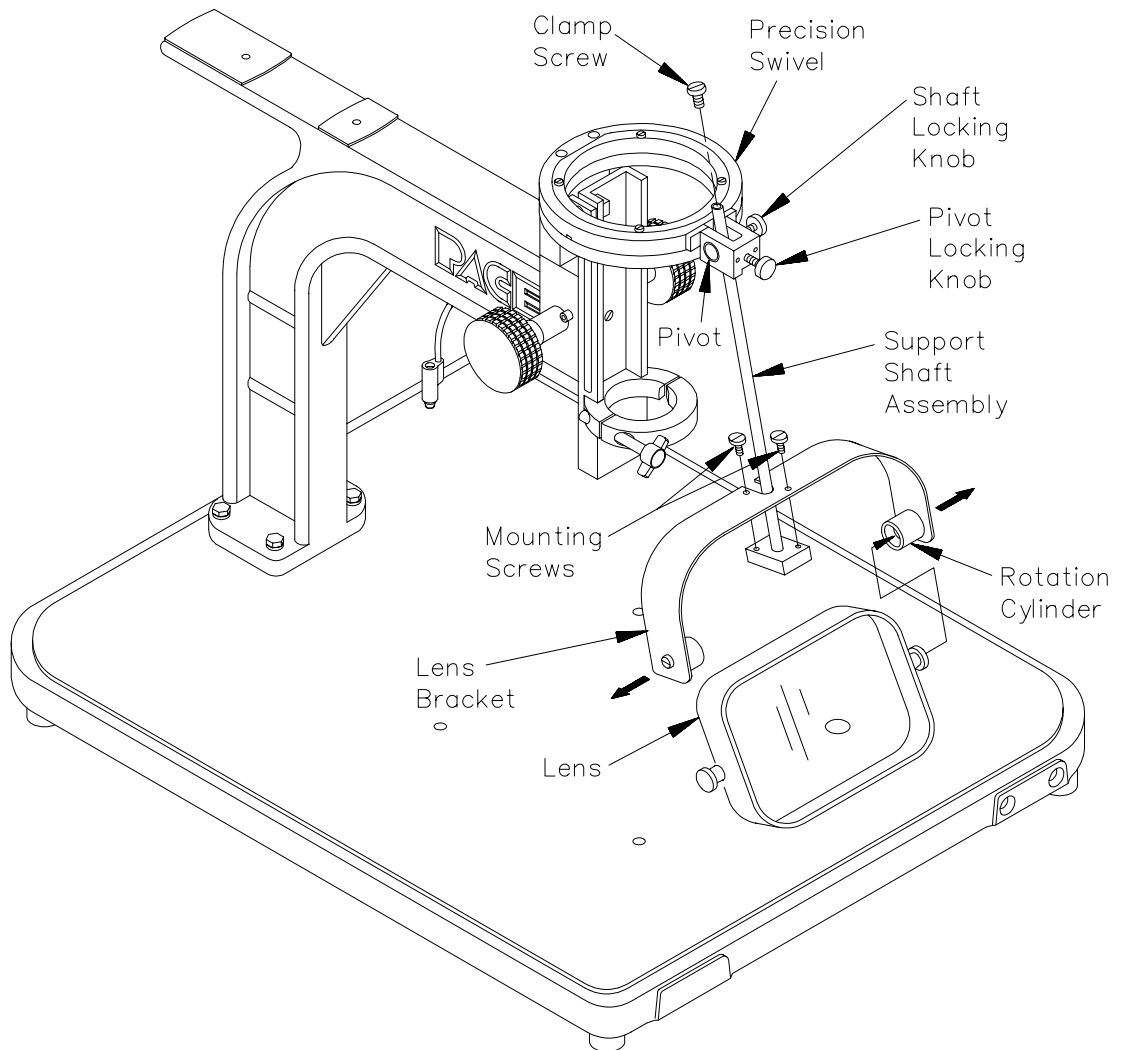
Installation

Use the following instructions and accompanying illustrations as a guide to install the Lens Vision Attachment, part number 6018-0104.

1. Remove the Clamp Screw from the end of the Support Shaft Assembly.
2. Hold the Support Shaft Assembly as shown with the flat portion of the rod on the right side. Insert the rod end of the Support Shaft Assembly up through the hole in the Pivot.
3. Tighten the Shaft Locking Knob to secure the Support Shaft Assembly in position.
4. Install the Clamp Screw (removed in step 3) onto the end of the Shaft Support Assembly.
5. Position the Lens Bracket on the Support Shaft Assembly as shown with the holes in the bracket aligned with the mounting holes in the Support Shaft Assembly.
6. Secure the Lens Bracket to the Support Shaft Assembly as shown using the 2 Mounting Screws.
7. Place the Lens in position on the Lens Bracket in the following manner.
 - a) Position the Lens as shown with the Lens directly beneath the Lens Bracket.

NOTE
To ease installation of the Lens, you may wish to loosen the Shaft Locking Knob, raise the Support Shaft Assembly (with attached Lens Bracket) and secure in position by tightening the Shaft Locking Knob.

- b) Place one of the rotation knobs (on ends of the Lens) into one of the Rotation Cylinders on the Lens Bracket.
 - c) Gently pull the second Rotation Cylinder out slightly and place the second Lens rotation knob in the free cylinder.
 - d) Release the Lens Bracket. The bracket will now spring back together to hold the Lens in position.



Operation

Adjust the Lens to the best height , distance and angle for best viewing using the following guidelines.

- Height - To adjust height, loosen the Shaft Locking Knob. Raise or lower Lens and lock in position by tightening the Shaft Locking Knob.
- Distance - To adjust distance, loosen the Pivot Locking Knob. Move the Lens in or out and lock in position by tightening the Pivot Locking Knob.
- Angle - To adjust angle, simply move the angle of the Lens in the Lens Bracket for best viewing.

Vision Systems

Camera Vision Attachment

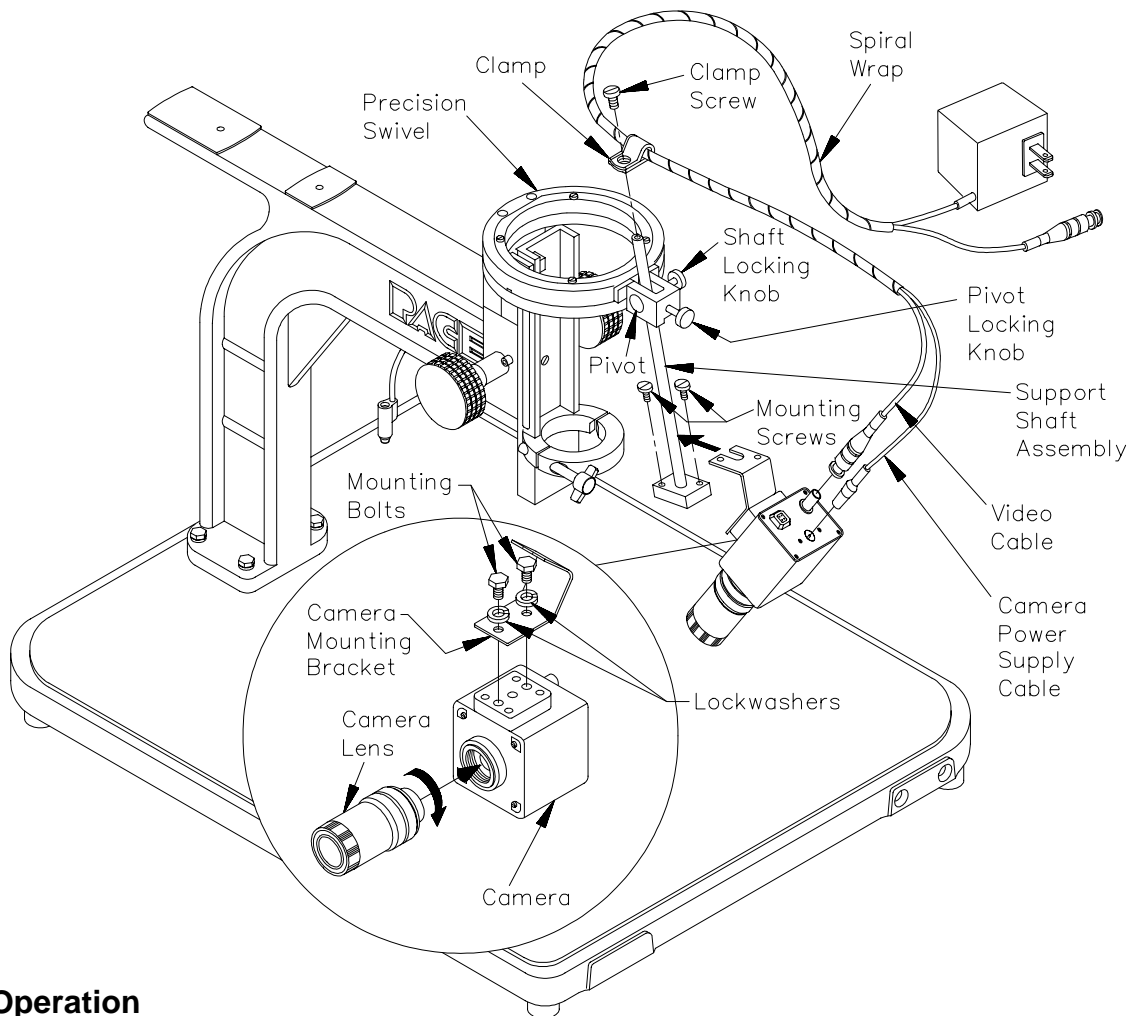
Installation

Use the following instructions and accompanying illustrations as a guide to install the Camera Vision Attachment, part number 6018-0102 (NTSC) or 6018-0103 (PAL).

1. Position the Camera Mounting Bracket on the Camera as shown. Secure in position using the 2 hex head Mounting Bolts and Lockwashers.
2. Screw the Camera Lens onto the Camera.
3. Remove the Clamp Screw from the end of the Support Shaft Assembly.
4. Hold the Support Shaft Assembly with the flat portion of the rod on the right side. Insert the rod end of the Support Shaft Assembly up through the hole in the Pivot.
5. Tighten the Shaft Locking Knob to secure the Support Shaft Assembly in position.
6. Position the Camera (with Camera Mounting Bracket) on the Support Shaft Assembly as shown with the holes in the Camera Mounting Bracket aligned with the mounting holes in the Support Shaft Assembly.
7. Insert the 2 enclosed Mounting Screws through the Camera Mounting Bracket and into the mounting holes on the Support Shaft Assembly. Tighten the screws to secure the Camera in position.
8. Plug one end of your Video Cable (RG59/U type - not supplied by PACE) into the video connector at the rear of the Camera.
9. Plug the free end of the Video Cable into your video monitor (75 ohm input). PACE does not provide a monitor.

NOTE
A Camera Power Supply is provided with the NTSC system (part number 6018-0102); a supply is not provided with the PAL version (part number 6018-0103). When purchasing a Camera Power Supply for a PAL version, it must comply with the following requirements: 12 V DC Output, 500ma. Current Rating Cable terminates with Mini-Plug, 5.5mm O.D., 2.1mm I.D., Center Positive

10. Plug the Camera Power Supply cable mini-plug into the power connector at the rear of the Camera.
11. Wrap the supplied length of plastic Spiral Wrap around both the Video and Camera Power Supply Cables. Begin at a point approximately 10.2cm (4 inches) from the Camera connections.
12. Place the Clamp over the cables & Spiral Wrap as shown.
13. Install the Clamp Screw (removed in step 3) through the Clamp and into the end of the Shaft Support Assembly. Do not tighten the screw.
14. Adjust the cables and Spiral Wrap for best use. Rotate the Camera around the Precision Swivel to ensure that dress of cables allows free movement. Tighten Clamp Screw to secure cables in position.



Operation

Adjust the Camera for your application using the following guidelines.

Height - To adjust height, loosen the Shaft Locking Knob. Raise or lower Camera and lock in position by tightening the Shaft Locking Knob.

Distance - To adjust distance, loosen the Pivot Locking Knob. Move the Camera in or out and lock in position by tightening the Pivot Locking Knob.

Angle - To adjust angle, simply move the Camera in an arc around the Precision Swivel.

Focus - The Camera has a built-in automatic focus control.

Lens - A Zoom control is located at the end of the Lens and an Aperture control is located closest to the Camera body. Adjust these controls as necessary for best viewing.

Packing Lists

The following tables list the items shipped with each ThermoFlo system and optional accessory. The Thermocouple Meter and Large Board Holder are shipped with separate instructions and are not listed in the tables. All items listed with a part number are items which can be ordered through your local, authorized PACE distributor.

Systems

TF 200 PACKING LIST			Quantity Supplied	
Item No.	Description	Part Number	115 VAC Systems	230 VAC Systems
1	ThermoFlo Unit (115 VAC)	-----	1	-----
2	ThermoFlo Unit (230 VAC)	-----	-----	1
3	ThermoFlo Cubby Kit	-----	1	1
4	Hose Retention Kit	-----	1	1
5	Angle Bracket Kit	6018-0097-P1	1	1
6	Nozzle Removal Rubber Pad	1100-0303	1	1
7	Detachable Power Cord, 115 VAC Systems	1332-0094	1	-----
8	Detachable Power Cord, 230 VAC Systems	1332-0093	-----	1
9	Vacuum Cup Kit	6993-0196-P1	1	1
10	Nozzle Adapter Assembly	4028-0001	1	1

Table 1. TF 200 Packing List

TF 500 PACKING LIST

Item No.	Description	Part Number	Quantity	Supplied
			115 VAC Systems	230 VAC Systems
1	ThermoFlo Unit (115 VAC)	-----	1	-----
2	ThermoFlo Unit (230 VAC)	-----	-----	1
3	ThermoFlo System Work Platform	6018-0099	1	1
4	Vertical Slide Assembly (w/Support Arm)	-----	1	1
5	Board Holder Assembly	-----	1	1
6	Platform Accessory Kit	-----	1	1
7	Base Plate	-----	1	1
8	Swivel Ring	1321-0320	1	1
9	Patch Cord (ground cable)	-----	1	1
10	Interface Cable Assembly	-----	1	1
11	Nozzle/Chip Tool Assembly	1100-0231	1	1
12	Mounting Hardware	-----	-----	-----
13	Rubber Feet	-----	4	4
14	ThermoFlo Accessories Manual	5050-0421	1	1
15	ThermoFlo Cubby Kit	-----	1	1
16	Hose Retention Kit	-----	1	1
17	Angle Bracket Kit	6018-0097-P1	1	1
18	Nozzle Removal Rubber Pad	1100-0303	1	1
19	Detachable Power Cord, 115 VAC Systems	1332-0094	1	-----
20	Detachable Power Cord, 230 VAC Systems	1332-0093	-----	1
21	Vacuum Cup Kit	6993-0196-P1	1	1
22	Nozzle Adapter Assembly	4028-0001	1	1

Table 2. TF 500 Packing List

Packing Lists

TF 700 PACKING LIST			Quantity	Supplied
Item No.	Description	Part Number	115 VAC Systems	230 VAC Systems
1	ThermoFlo Unit (115VAC)	-----	1	-----
2	ThermoFlo Unit (230VAC)	-----	-----	1
3	ThermoFlo Advanced Placement Platform	-----	1	1
4	Vertical Slide Assembly (w/Support Arm)	-----	1	1
5	Fine Adjustment Table	-----	1	1
6	Platform Accessory Kit	-----	1	1
7	Base Plate	-----	1	1
8	Spacer	-----	1	1
9	Swivel Ring	1321-0320	1	1
10	Patch Cord (ground cable)	-----	1	1
11	Mounting Plate, Heater Unit	-----	1	1
12	Interface Cable Assembly	-----	1	1
13	Nozzle/Chip Tool Assembly	1100-0231	1	1
14	Mounting Hardware	-----	-----	-----
15	Rubber Feet	-----	4	4
16	ThermoFlo Accessories Manual	5050-0421	1	1
17	ThermoFlo Cubby Kit	-----	1	1
18	Hose Retention Kit	-----	1	1
19	Angle Bracket Kit	6018-0097-P1	1	1
20	Nozzle Removal Rubber Pad	1100-0203	1	1
21	Detachable Power Cord, 115 VAC Systems	1332-0094	1	---
22	Detachable Power Cord, 230 VAC Systems	1332-0093	---	1
23	Vacuum Cup Kit	6993-0196-P1	1	1
24	Nozzle Adapter Assembly	4028-0001	1	1

Table 3. TF 700 Packing List

PRC 1500 PACKING LIST			Quantity	Supplied
Item No.	Description	Part Number	115 VAC Systems	230 VAC Systems
1	ThermoFlo Unit (115 VAC)	-----	1	-----
2	ThermoFlo Unit (230 VAC)	-----	-----	1
3	MBT 250A System, Complete (115 VAC)	8007-0206	1	-----
4	MBT 250AE System, Complete (230 VAC)	8007-0207	-----	1
5	ThermoFlo Cubby Kit	-----	1	1
6	Hose Retention Kit	-----	1	1
7	Angle Bracket Kit	6018-0097-P1	2	2
8	Power Source Interlock Kit	6993-0141-P1	1	1
9	Nozzle Removal Rubber Pad	1100-0303	1	1
10	Detachable Power Cord, 115 VAC Systems	1332-0094	1	-----
11	Detachable Power Cord, 230 VAC Systems	1332-0093	-----	1
12	Vacuum Cup Kit	6993-0196-P1	1	1
13	Nozzle Adapter Assembly	4028-0001	1	1
14	Operation & Maintenance Manual	5050-0420	1	1

Table 4. PRC 1500 Packing List

Packing Lists

Optional Accessories

FUME EXTRACTION "READY" ATTACHMENT PACKING LIST

Item No.	Description	Part Number	Quantity Supplied
1	Fume Extraction "Ready" Attachment	6018-0105	1
2	Hose Connector	-----	1
3	Knob, 5/16-18 x .50" Lg.	-----	1
4	Knob, 5/16-18 x 1.0" Lg.	-----	1
5	Tube	-----	1
6	ThermoFlo Accessories Manual	5050-0421	1

Table 5. Fume Extraction "Ready" Attachment Packing List

LENS VISION ATTACHMENT PACKING LIST

Item No.	Description	Part Number	Quantity Supplied
1	Lens Vision Attachment	6018-0104	1
2	Lens Bracket Assembly	-----	1
3	Precision Swivel Attachment	-----	1
4	Precision Swivel	-----	1
5	Spacer	-----	1
6	Mounting Screw, 6-32 x 1.75" Lg.	-----	2
7	Hex Nuts, 10/32	-----	2
8	Support Shaft Assembly	-----	1
9	Magnifying Lens	-----	1
10	Screw, 6-32 x .25" Lg.	-----	2
11	ThermoFlo Accessories Manual	5050-0421	1

Table 6. Lens Vision Attachment Packing List

Packing Lists

CAMERA VISION ATTACHMENT PACKING LIST			Quantity Supplied	
Item No.	Description	Part Number	115 VAC Systems	230 VAC Systems
1	Camera Vision Attachment (115 VAC)	6018-0102	1	-----
2	Camera Attachment (230 VAC)	6018-0103	-----	1
3	Precision Swivel Attachment	-----	1	1
4	Precision Swivel	-----	1	1
5	Spacer	-----	1	1
6	Mounting Screw, 6-32 x 1.75" Lg.	-----	2	2
7	Hex Nut, 6-32	-----	2	2
8	Support Shaft Assembly	-----	1	1
9	Camera Vision Kit	-----	1	1
10	Camera, NTSC	-----	1	-----
11	Camera, PAL	-----	-----	1
12	Zoom Lens	-----	2	2
13	Camera Power Supply (115 VAC)		1	-----
14	Camera Mounting Bracket	-----	1	1
15	Screw, M6 x 6mm Lg.	-----	2	2
16	Screw, 6-32 x .25" Lg.	-----	2	2
17	Spiral Wrap, 6 ft. Lg.	-----	1	1
18	Cable Clamp	-----	1	1

Table 7. Camera Vision Attachment Packing List

FIBER OPTIC LIGHTING ATTACHMENT PACKING LIST			Quantity Supplied	
Item No.	Description	Part Number	115 VAC Systems	230 VAC Systems
1	Fiber Optic Lighting Attachment (115 VAC)	6018-0100	1	-----
2	Fiber Optic Lighting Attachment (230 VAC)	6018-0101	-----	1
3	Light Power Supply (115 VAC)	-----	1	-----
4	Light Power Supply (230 VAC)	-----	-----	1
5	Goose Neck Assembly	-----	1	1
6	Light Bracket	-----	1	1
7	Screw 10-32 x .25" Lg.	-----	2	2

Table 8. Fiber Optic Lighting Attachment Packing List